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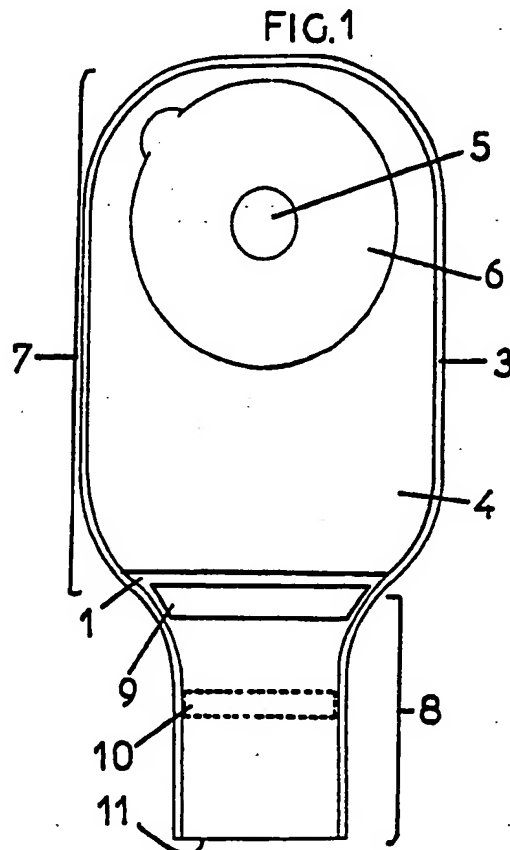
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GB 0782241 A US 4408643 A US 4233977 A

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(54) Drainable collection bag

(57) A drainable collection bag 1 is disclosed. the bag has an opening 5 for securing against an orifice or wound, a main body 7 and a flat end portion 8 with a drainage opening 11. two flexible interlocking strips 9,10 are provided for releasably sealing the drainage opening. the strips are arranged so that upon folding or rolling up of the end portion, they are brought into interlocking engagement to seal the opening.



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FIG.1

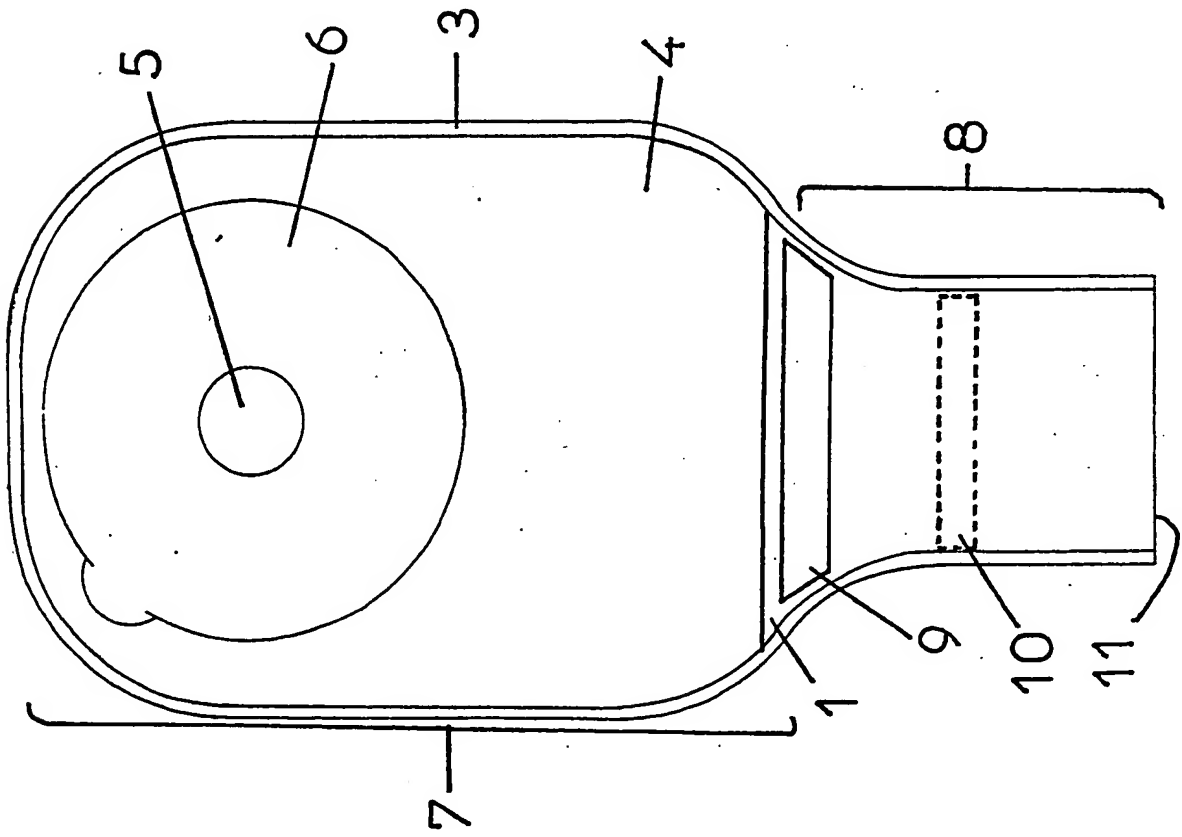


FIG. 2

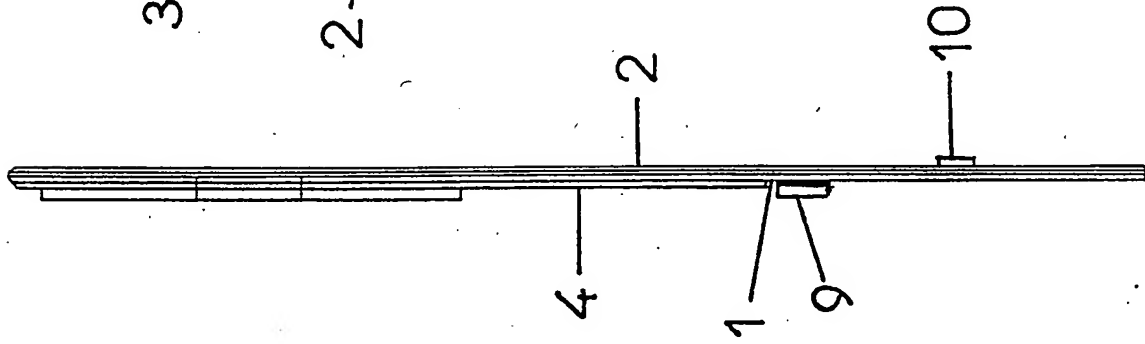
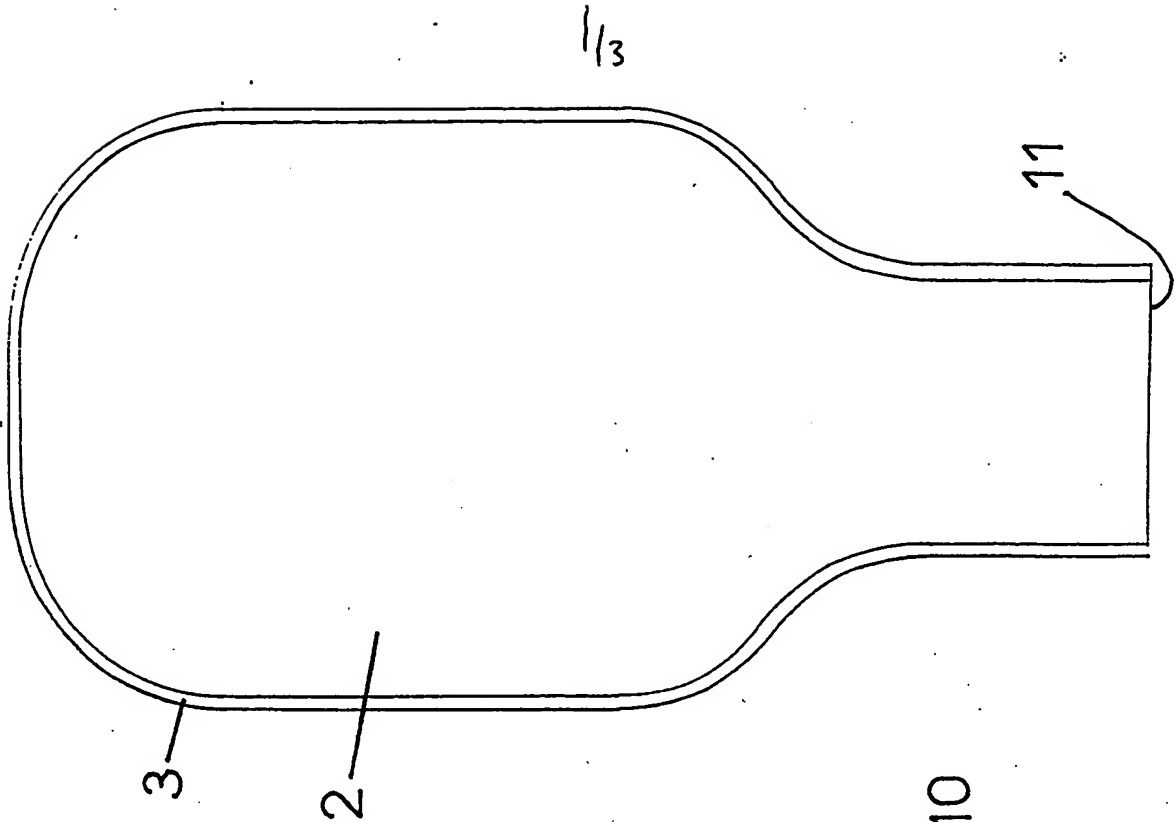


FIG. 3



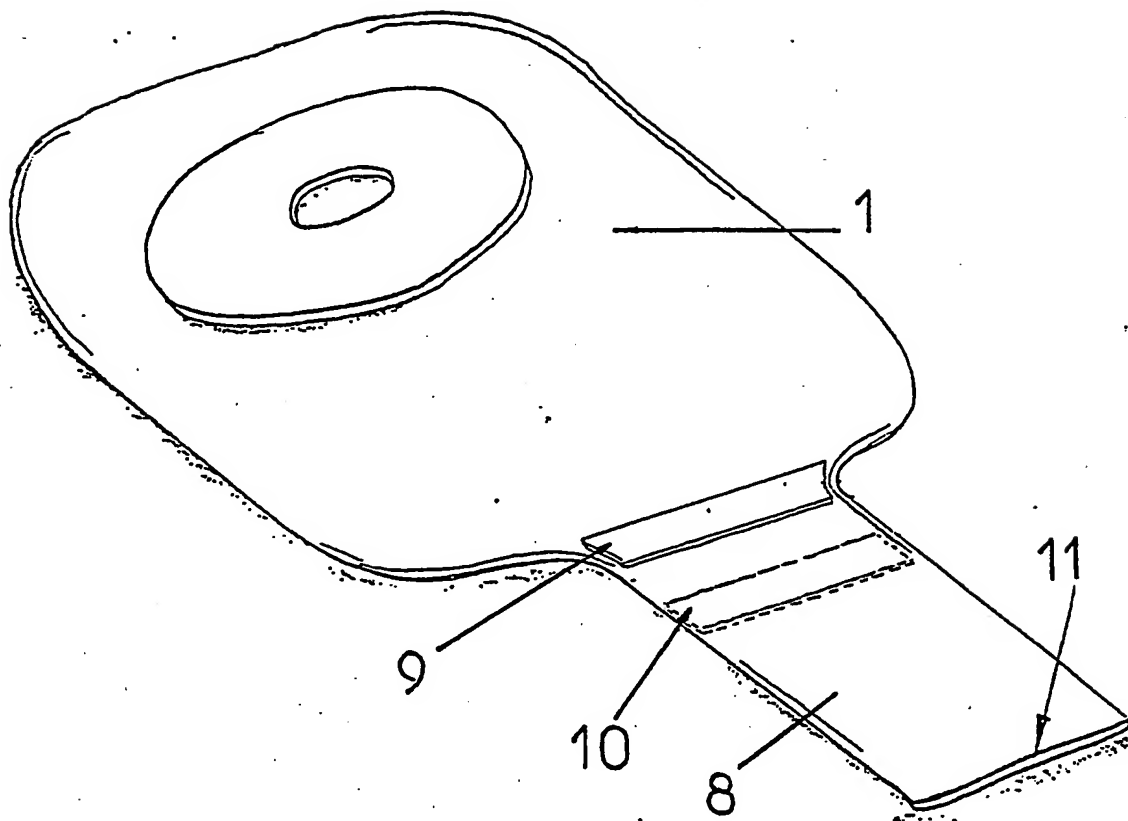


FIG. 4

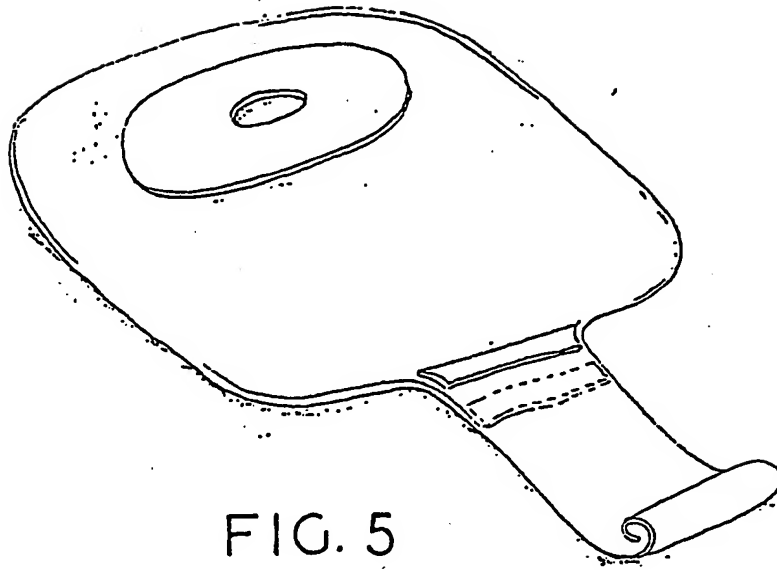


FIG. 5

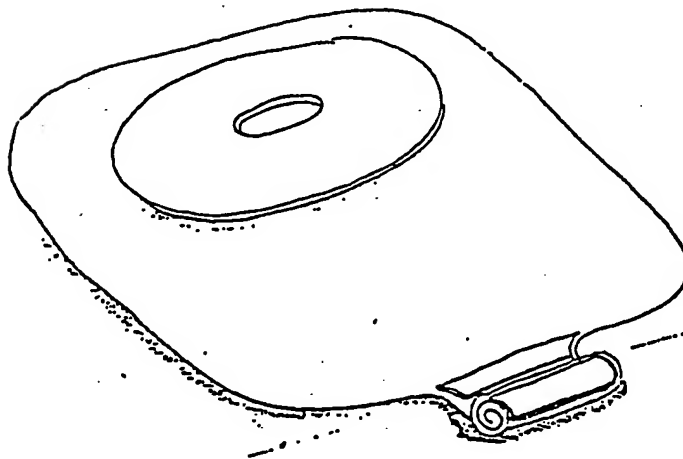


FIG. 6

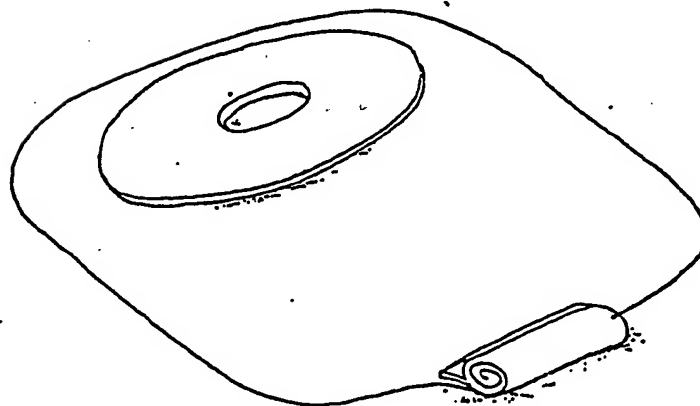


FIG. 7

DRAINABLE COLLECTION BAG

This invention relates to a drainable collection bag for receiving bodily waste material from an orifice or wound in the human body, and more particularly to an improved closure for such a bag.

Ostomy bags and wound drainage bags are well known and typically comprise a pair of panels welded together around their peripheries, one of the panels having an opening therein for sealing against the skin around the wound or orifice for receiving bodily wastes. Such bags can be provided at their lower ends with a neck having a sealable opening at one end through which the collected contents of the bag can be drained. Several types of

closure means are currently used to seal the opening. One type, for example, is in the form of a clamp formed of plastics material which is clamped about the neck. Another type of closure comprises a plastics strip having a plurality of wire cores extending therethrough along its length. The neck of the ostomy bag is folded in on itself and the ends of the strip are folded inwardly to hold the neck tightly in its folded configuration thereby achieving a seal.

Ostomy and wound drainage bags are intended to be worn next to the skin and under the patient's clothing, and one important requirement, in addition to the need for them to be leakproof, is that they should be comfortable to wear. Moreover, they should preferably not cause chafing or irritation of the skin. In addition, it is desirable that the closures should have as little bulk as possible in order to make them less visible through the patient's clothing.

However, the aforementioned types of closure both present edges which not only can be "felt" by the patient, and therefore have the potential for causing irritation when worn for long periods of time, but tend also to be rather prominent through the patients clothing, particularly in the case of the clamp.

It is an object of the present invention to overcome or to at least alleviate these problems.

Accordingly the invention provides a drainable

collection bag (such as an ostomy bag or wound drainage bag) for receiving bodily waste materials from an orifice or wound in the human body, the bag having an opening for securing against the orifice or wound to receive said bodily waste materials; and having a generally flat end portion extending from a main body portion of the bag; the said end portion having a drainage opening at one end thereof and being provided with means for releasably sealing the drainage opening; wherein the releasable sealing means comprises a first flexible interlockable strip secured to one face of the end portion at a location adjacent or towards said main body portion; and secured to the opposite face of the end portion at a location further apart away from the main body portion than the first flexible interlockable strip, a second flexible interlockable strip arranged such that upon folding the end portion inwardly upon itself, the first and second interlockable strips are brought into interlocking engagement to seal the drainage opening.

The generally flat end portion of the bag will usually be in the form of a neck, ie. a portion of reduced width relative to the width of the bag.

The first and second flexible interlockable strips preferably have ends which do not extend beyond the edges of the neck.

Although it is preferred that each interlockable strip is a single continuous strip extending across the

) width of the neck. this is not an essential requirement. The term strip as used herein. can mean a single continuous strip or can mean a plurality of discrete interlocking elements. for example arranged in a row across the width of the neck. However. it is most preferred that the interlocking strip (or portions of strip) extend across substantially the entire width of the neck.

The first and second strips are preferably interlockable by virtue of one strip being provided with an array of flexible stalk-like structures having ends arranged to engage and be releasably retained by loop means on the other strip. The ends of the stalk-like structures may. for example. be hook-like in form and arranged to engage loops on the other strip. The loops may be discrete loops or may be defined by a loosely packed array of fibres on the strip. The ends of the stalk-like structures alternatively may be mushroom shaped or bulbous ended for engagement with a velour-like surface on the other strip. Preferably the first and second strips have a fabric backing with the stalk-like structures and loops extending from or being mounted on the fabric backing. Examples of interlockable strips of the aforementioned type are those sold under the trade names (RTM) (RTM) "Velcro" and "Cric-Crac".

Such interlockable strips are not rigid and thus are more comfortable for the wearer. Moreover. such



interlockable strips are considered to be more easily opened by patients with reduced dexterity.

The invention will now be illustrated in greater detail by reference to the non-limiting embodiments shown in Figures 1 to 7 in which:

Figure 1 is a view from the front of a drainable collection bag according to one embodiment of the invention;

Figure 2 is a view from the side of the embodiment shown in Figure 1;

Figure 3 is a view from the rear of the embodiment shown in Figure 1;

Figure 4 is an isometric view illustrating the embodiment of Figure 1 prior to folding;

Figure 5 is an isometric view of the embodiment shown in Figure 4 in a partly folded configuration;

Figure 6 is an isometric view showing the collection bag immediately prior to sealing of the drainage opening; and

Figure 7 is an isometric view of the collection bag with the drainage opening sealed.

Referring now to the drawings, Figure 1 illustrates a drainage bag formed from front and rear panels 1 and 2 respectively sealed together around their peripheral edges 3. A polyethylene spun bonded non woven fabric layer 4 overlays panel 1 and is secured thereto along its peripheral edge. Spun bonded panel 4 serves as a "comfort

layer" which provides a better feel against the skin and serves to reduce any discomfort experienced by the patient when wearing the bag. Panels 1 and 2 are formed of a co-extruded trilaminate comprising a polyvinyl dichloride gas barrier layer sandwiched between two layers of ethylene vinyl acetate layer. The polyvinyl dichloride layer serves to prevent the leakage of noxious odours through the fabric of the bag. A suitable trilaminate is the "MF-Film" product available from Grace GmbH Larderstedt Germany.

An opening 5 is provided in panel 1 for receiving the contents from a stomal opening in a patient. Surrounding the opening 5 is an adhesive disc 6 which enables the collection bag to be secured to the skin of the patient. The adhesive disc 6 typically comprises a hydrocolloid adhesive supported on a layer of non-woven microporous material eg. formed from polyester/nylon which in turn is secured to the panel 1 by means of a coating of EVA. The outer surface of the hydrocolloid adhesive layer may conveniently be protected by means of a silicone backed release paper prior to use. Adhesive disc 6 may be of a known type and need not be described further here.

The collection bag has a main body portion 7 having extending therefrom a neck portion 8 of reduced width relative to the width of main body portion 7. At the upper end of the neck portion 8 and secured thereto by means of suitable adhesive is a strip 9 of either the

'male' or 'female' component of "velcro". Secured to the other side of the neck portion 8, at a position further away from the main body portion 7 than the strip 9, is a strip 10 (shown in phantom) formed from the complimentary "velcro" component. At the lower end of the neck is drainage opening 11.

The mode of operation of the sealing means is shown in some detail in Figures 4 to 7. Thus, as can be seen from Figure 5, the neck portion 8 is initially folded in on itself towards the strips 9 and 10 of "velcro" material. Figure 6 illustrates the collection bag wherein the neck portion 8 has been wound in upon itself such that "velcro" strips 9 and 10 lie side by side but are not yet in interlocking engagement. By folding the neck portion 8 once more, the mating "velcro" strips 9 and 10 engage and interlock. In a such a way, the drainage opening 11 is tightly sealed.

The "velcro" strips 9 and 10 are spaced apart such that the neck portion 8 must be tightly folded in upon itself in order to ensure maximum overlap of the two strips and hence the strongest interlocking action. The tight folds provide the necessary seal against leakage of the contents of the bag from the drainage opening 11.

In order to empty the contents of the bag, the "velcro" seal can simply be broken in known fashion and the neck portion unrolled.

It has been found that bags having the construction

shown in the drawings can be filled to within  $2/3$  to  $3/4$  of their total volume with cold water and do not leak when worn over a period of three to four hours.

In addition to the comfort and visibility aspects, a further advantage of the fastening system of the present invention with regard to a fastening system such as the clamp arrangement conventionally used, is that there are no exposed ends of the neck portion 8 from which residual bodily waste can escape.

The fastening system of the present invention is considered to provide a good seal for up to about 300 re-fastenings. In practice, a bag of the type described hereinabove would be worn for a period of three to four days during which the drainage opening typically would be unfastened and re-fastened between 20 to 30 times.

It will readily be apparent that numerous modifications and alterations may be made to the drainable collection bag illustrated in the accompanying drawings without departing from the principles underlying the present invention, and all such modifications and alterations are intended to be embraced by this application.

Claims

1. A drainable collection bag for receiving bodily waste material from an orifice or wound in the human body, the bag having an opening for securing against the orifice or wound to receive said bodily waste materials; and having a generally flat end portion extending from a main body portion of the bag; the said end portion having a drainage opening at one end thereof and being provided with means for releasably sealing the drainage opening; wherein the releasable sealing means comprises a first flexible interlockable strip secured to one face of the end portion at a location adjacent or towards said main body portion; and secured to the opposite face of the end portion at a location further apart away from the main body portion than the first flexible interlockable strip, a second flexible interlockable strip arranged such that upon folding the end portion inwardly upon itself, the first and second interlockable strips are brought into interlocking engagement to seal the drainage opening.

2. A drainable collection bag according to claim 1 wherein the generally flat end portion of the bag is in the form of a neck, ie a portion of reduced width relative to the width of the bag.

3. A drainable collection bag according to claim 1 or claim 2 wherein the first and second flexible interlockable strips have ends which do not extend beyond the edges of the neck.

4. A drainable collection bag according to any one of the preceding claims wherein each interlockable strip is a single continuous strip extending across the width of the neck.

5. A drainable collection bag according to any one of claims 1 to 3 wherein the flexible interlockable strip is defined by a plurality of discrete interlocking elements arranged in a row across the width of the neck.

6. A drainable collection bag according to any one of claims 2 to 5 wherein the interlockable strips extend across substantially the entire width of the neck.

7. A drainable collection bag according to any one of the preceding claims wherein the first and second strips are interlockable by virtue of one strip having an array of flexible stalk-like structures having ends arranged to engage and be releaseably retained by loop means on the other strip.

8. A drainable collection bag according to claim 7 wherein the ends of the stalk-like structures are hook-like in form and are arranged to engage loops on the other strip.

9. A drainable collection bag according to claim 8 wherein the loops are discrete loops or are defined by a loosely packed array of fibres on the strip.

10. A drainable collection bag according to any one of claims 7 to 9 wherein the ends of the stalk-like structures are mushroom shaped or bulbous ended for engagement with a velour-like surface on the other strip.

11. A drainable collection bag according to any one of claims 7 to 10 wherein the first and second interlockable strips comprise a fabric backing with the stalk-like structures and loops extending from or being mounted on the fabric backing.

12. A drainable collection bag as defined in any one of the preceding claims which is an ostomy bag or wound drainage bag.

13. A drainable collection bag substantially as described herein with reference to the accompanying drawings.

**Examiner's report to the Comptroller under  
Section 17 (The Search Report)**

GB 9213378.4

**Relevant Technical fields**

- (i) UK Cl (Edition L ) A5R (RCE)  
B8K (KBA)
- (ii) Int Cl (Edition 5 ) A61F 5/44; 5/445  
B65D 33/16; 33/24; 33/26

**Search Examiner**

N A FRANKLIN

**Databases (see over)**

(i) UK Patent Office

(ii) ONLINE DATABASES: WPI

**Date of Search**

21 MAY 1993

Documents considered relevant following a search in respect of claims 1-13

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
A	GB 0782241 (U S RUBBER) note Figures 1-3	
A	US 4408643 (LASKE) note Figures 6-8	
A	US 4233977 (MATTSON) note Figures	



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